TEXTILE TECHNOLOGY DIGEST

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ABSTRACTS

FIBERS A

NATURAL FIBERS A 1

Drying cotton at high temperatures prior to ginning

B. Johnson. *Cotton Gin and Oil Mill Press 55:* 11, 36-37 (October 9, 1954).

Research at the Textile Research Institute indicates that it is mainly the overdrying of the cotton rather than the temperature of the air which causes the quality deterioration. All comparisons are between cotton which was not dried artificially and cotton which was deliberately mistreated as regards the heat to which it was subjected. The usual trade laboratory methods and conventional classing did not distinguish between overdried (or overheated) cottons and the unheated control cotton in these experiments. Regardless of the rate at which the cotton was reduced to a moisture content below that recommended, the effects on the cotton were about the same: yarn strength was decreased and the ends down in spinning were increased. The cotton, as a result of overdrying under the conditions used in this test, suffered some changes in structure which gave rise to additional fiber breakage in ginning and yarn manufacture. It is believed that the resulting short fibers are the cause of the lowered quality of the cotton experienced by the spinning mill operator. A complete report will be published in the *Textile Research Journal* by D. J. Leitgeb and Helmut Wakeham.

Extensive amination of cotton with ethylenimine

L. M. Soffer and E. Carpenter (Ballistic Research Laboratories, Aberdeen Proving Ground, Md.). *Textile Research J. 24:* 847-852 (September, 1954).

Aminated cottons of nitrogen contents ranging up to 29% are prepared by heating chemical cotton with ethylenimine at 140°-180°C. These products are considerably different from cellulose in their physical and chemical properties. A possible chemical structure for these materials is discussed but is shown to be not entirely satisfactory. 7 references.

Geometrical features of the three maturity groups of cotton fibers in the raw and swollen states

C. Nanjundayya (Technological Laboratory, Matunga, Bombay). *Indian Cotton Growing Rev. 8:* 196-206 (July, 1954).

Standard Indian cottons of the seasons 1932-33, 1940-41 and 1942-43 were studied. Ribbon-width, swollen diameter and wall thickness were measured to study fineness independently of length. 14 references.

Measurement of dielectric constant and dissipation factor of raw cottons

C. E. Kirkwood, Jr., N. S. Kendrick and H. M. Brown (Clemson School of Textiles). *Textile Research J. 24:* 841-847 (September, 1954).

By use of a suitable capacitance bridge and special condenser, the dielectric constant and dissipation factor at a frequency of 200 kc/sec. were measured for several varieties of cotton and for several types of trash removed during processing. Measurements were made at 70°F and 45%, 55%, and 65% R.H. The results are in fair agreement with those obtained by other workers. This research was part of a project on the cleaning and opening of cotton by the use of static electricity. 10 references.

Phosphorus content of Egyptian raw cotton

A. K. Wahbi and M. S. El-Ansary. *J. Textile Inst. 45:* T624-T629 (August, 1954).

Early workers have shown that it is possible to distinguish between Egyptian and American cottons on the basis of their phosphorus contents. The present paper describes an investigation with the object of finding out whether present-day varieties of Egyptian cotton still have the high phosphorus contents found by the earlier workers. The relation between phosphorus content and methylene blue number for raw and bleached cotton respectively is also considered. The efficiency of water, dilute caustic soda, and dilute sulfuric acid in removing phosphorus compounds, under certain conditions is determined. 11 references.

Sorption of water by soda-boiled cotton at low humidities and some comparisons with viscose rayon

J. B. Taylor. *J. Textile Inst. 45:* T642-T664 (August, 1954).

This work is part of the program of fundamental research of the British Rayon Research Association. Sorption data are presented for moisture regains below 1½ per cent at 25° to 65°C for soda-boiled cotton and compared with previous results for viscose yarn. 19 references.

Theory of fiber extraction. Part 1. Chapter 1. Fibrous plants

J. G. Thieme. *Textile Quart. 4:* 175-190 (September, 1954).

The historical and botanical background of seed fibers, fruit fibers, and stem fibers is surveyed. 50 references.

Histological structure of hemps

J. Szymanek. *Bull. Inst. Textile France No. 47:* 49-57 (June, 1954).

This study is related to the histological structure of hemps of various origins, and to the histological structure of the same plant at different heights. The structure varies considerably according to origin: primary fibers and secondary fibers may be found in different proportions. The appearance of *collenchyma* seems to follow the disappearance of secondary fibers.

Action of light on jute

W. G. Macmillan and H. P. Bhattacherjee (Indian Jute Mills Assoc. Research Institute). *J. Textile Inst. 45:* T700-T702 (September, 1954).

In studying the photochemical degradation of jute it was observed that a volatile oxidizing agent, possibly hydrogen peroxide, was formed from the lignin during the irradiation of jute. This oxidizing agent is shown to be the probable cause of the accelerated degradation of the constituents of the fiber resulting in a marked loss in tensile strength. These observations are demonstrated by experiment. 3 references.

Mechanical characters of jute

K. R. Sen. *Jute Bull. 17:* 133-139 (July, 1954).

Density and gravimetric fineness, filament strength, and moisture relationships are discussed.

Study of the action of alkalis on jute

W. G. Macmillan, A. B. Sen Gupta and S. K. Majumdar (Indian Jute Mills Assoc. Research Institute). *J. Textile Inst. 45:* T703-T715 (September, 1954).

The action of caustic soda, in particular, on jute is investigated in order to assess the extent and nature of the reaction, attention being paid to such characteristics as physical appearance, shrinkage, chemical constitution and tensile strength. An attempt was made to study the influence of progressive removal of hemicelluloses on the tensile properties of jute. A comparison is made between the properties of alkali-treated yarn and fiber and of yarn spun from alkali-treated fiber. 19 references.

Ramie. Chapter 6. Fiber properties

B. Luniak. *Textile Quart. 4:* 161-173 (September, 1954).

Includes graphs, photomicrographs, tables, and 18 references.

Creep of wool fibers in water

M. Feughelman. *J. Textile Inst. 45:* T630-T641 (August, 1954).

Under suitable loads, creep of wool fibers in distilled water was obtained with extensions varying from 2 per cent to 30 per cent, while the duration of the test varied from one second to a few minutes. Creep curves for individual fibers showed a pronounced variation with temperature and load. Typical sets of curves are illustrated, and the measurements are analyzed empirically. A two-state energy model proposed by Burte and Halsey has been fitted to the results obtained. An explanation is suggested for the reproducibility of the mechanical properties of wool fibers for strains less than 30 per cent. 8 references.

Stress relaxation of fibrous materials. Part 3. Stress relaxation of wool keratin in water and in salt solutions

E. T. Kubu, F. Frei and D. J. Montgomery (Textile Research Institute). *Textile Research J. 24:* 659-662 (July, 1954).

Parts 1 and 2 appeared in the December 1952 issue of *Textile Research Journal.* 8 references.

Fiber area per unit area of skin in the Ossimi sheep

F. M. Labban. *J. Textile Inst. 45:* T716-T718 (September, 1954).

Observations made on areas of skin on the shoulder and the hip of the Ossimi sheep have been examined statistically. 4 references.

MAN-MADE FIBERS A 2

Chemical and physical aspects of synthetic fibers

R. Hill (Imperial Chemical Ind. Ltd.). *Chemistry and Industry No. 36:* 1083-1089 (September 4, 1954).

Introductory address to the symposium on the *Chemistry and Physics of Synthetic Fibres* held by the Plastics and Polymer group of the Society of Chemical Industry, in London, March 24-26, 1954.

Effect of heat on fibers

S. P. Gundavda. *Brit. Rayon & Silk J. 31:* 66-68 (August, 1954).

Some notes summarizing present information on the effect of different temperatures on a number of synthetic fibers.

Man-made fibers roundup

Modern Textiles Mag. 35: 39-53 (September, 1954).

A survey of the economic and technical status of rayon, acetate, nylon, glass, polyesters, acrylics, and other man-made fibers.

Production of rayon, acetate and synthetic yarns in the United States

Modern Textiles Mag. 35: 69-76 (September, 1954).

This annual survey lists the producers, the denier and filament numbers of the yarns in current production, and the process, type and quality of the yarns. Complete reprints of the *Fiber Roundup* and *Denier-Filament Numbers Survey* may be obtained for 50¢ from the Reprint Dept., Rayon Publishing Corp., 303 Fifth Avenue, New York 16.

U. S. man-made fiber producers

Textile Organon 25: 144-149 (September, 1954).

This directory of United States man-made fiber producers includes addresses of offices, trade names, and plants.

Influence of repeated torsional deformations on the birefringence of nylon monofilaments

A. K. van der Vegt and J. Isings (Central Laboratory T.N.O., Delft, Holland). *(Letter to the Editor). Textile Research J. 24:* 862 (September, 1954).

Italian Movil

Skinner's Silk and Rayon Record 28: 957 (September, 1954).

Movil is a polyvinyl chloride fiber of the same grouping as the French and German Rhovyl and the German PeCe. Its present development and properties are described.

New synthetic fiber Nitrilon

Reyon, Zellwolle u. Chemiefasern No. 4: 252 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 537 (July 31, 1954).

In addition to the synthetic fiber Silon a new fiber Nitrilon is being produced in Czechoslovakia (licensed by the Kirow Textile Institute in Leningrad) which is claimed to be heat-resistant (up to 200°C), and acid- and solvent-resistant. It is at least equal to nylon and Perlon, but more like silk than any other synthetic fiber.

Trelon mixed polyamide fibers

H. Ludewig· *Faserforsch. u. Textiltech. 5, No. 4:* 171-172 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 537 (July 31, 1954).

The Trelon mixed polyamide fibers are named according to their chemical composition and use Eftrelon, Wetrelon, etc. Historical development, inventors and patents, chemical formula, preparation, properties of Eftrelon, chemical and biological behavior and dyeing properties, identification, processing properties and uses of the products are briefly reviewed. Trelon fibers are a product of the VEB Thuringisches Kunstfaserwerk Wilhelm Pieck, Schwarza.

Polymerization of acrylics. Part 1. The chemistry of polymerization of the acrylics. Part 2. Acrylonitrile copolymers and relationship to dyeability

G. E. Ham (Chemstrand Corp.). *Textile Research J. 24:* 597-614 (July, 1954).

25 references.

Tensile properties of bristle fibers made from a- and b-casein

N. J. Hipp, M. L. Groves and T. L. McMeekin (Eastern Regional Research Laboratory). *Textile Research J. 24:* 618-623 (July, 1954).

The tensile properties of fibers made from α- and β-casein and unfractionated casein have been compared. β-Casein fiber, oriented by stretching, was considerably better than the other casein fibers, and values for its wet and dry tenacity compared favorably with corresponding values for wool. The better fiber properties of β-casein are ascribed to its molecular structure. 27 references.

Preparation and properties of some inorganic alginate fibers

M. J. Dudgeon, R. S. Thomas and F. N. Woodward (Inst. of Seaweed Research, Scotland). *J. Soc. Dyers Colourists 70:* 230-237 (June, 1954).

Alginate fibers have been produced in which alginic acid is combined partly with calcium and partly with other metals. In the case of all the metals examined (chromium, copper, cadmium, tin, bismuth, barium, zinc, and aluminum) there is a reduction in water imbibition but with the exception of aluminum, barium, and cadmium, this is accompanied by a reduction in dry and wet extensibilities. Calcium-cadmium alginate appears to be most promising, since, compared with calcium alginate fiber, it shows no loss in dry

extensibility, an increased wet tenacity, and only a small loss in dry tenacity, and, moreover, can be produced with no more difficulty than calcium alginate. 8 references.

GENERAL A 3

Fibers

J. L. Vodonik, R. S. Casey and C. S. Grove, Jr. *Ind. Eng. Chem. 46:* 2076-2083 (October, 1954).

Developments of the past year in fibers and fiber treatments are reviewed under the headings: synthetic fibers research, cotton fibers research, fiber markets and prospects, industrial uses, nonwoven fabrics, synthetic fibers manufacture, fiber finishes, identification of fibers, and Flammable Fabrics Act. 77 references.

Structure and optical behavior of some natural and synthetic fibers

C. V. Raman and M. R. Bhat (Raman Research Institute, Bangalore). *Proc. Indian Acad. Sci. 39A:* 109-116 (1954). Through *Chem. Abstracts 48:* 11065 (September 25, 1954).

A new method for studying the structure of textile fibers is described. Optical diffraction patterns of a single fiber are obtained by making a narrow pencil of light traverse the fiber set transversely to the path of the light and recording the diffracted light on a photographic plate. Either polarized or unpolarized light can be used. Preliminary results obtained with cotton, wool, silk, rayon, and chrysotile fibers are reported. A short discussion mentions the advantages of this method which gives indications supporting x-ray data.

YARNS B

OPENING AND PICKING B 1

Picker-lap variation

H. Locher (Uster Corp.). *Textile World 104:* 91 (October, 1954).

Fourteen possible causes of variation are listed.

Whitin Axi-feed and Axi-flo

Whitin Rev. 21: 1-21 (September-October, 1954).

Diagrams (including layout and arrangement), photographs, and tables of data contribute to this discussion of the Axi-feed and Axi-flo opening and cleaning machines.

The Dodd blending feeder and single process range

S. Dodd and Sons Ltd. *Textile Wkly. 54:* 32-36 (July 2, 1954).

The technical features of this new British blending feeder are described. Diagrams.

CARDING AND COMBING B 2

Checklist for cotton carding

J. E. Allen. *Textile World 104:* 118-119 (October, 1954).

A list of items to watch in carding. The items have been alphabetized and broken down into condition, result, and remedy. Some additional tips are given, and a suggested oiling schedule is included.

Cotton-card efficiency

N. H. Pomfret. *Textile World 104:* 109, 170-176 (October, 1954).

The carding number is a more accurate measure of carding than doffer speed. Cleaning efficiency depends to a large extent on settings of lickerin to feed plate and flats to cylinder, plus condition of card. Other suggestions are to (1) space stripping cycles farther apart to decrease cylinder-strip waste; (2) grind light and often; (3) periodically grind from underneath.

84 inch wool card

Textile Ind. 118: 144-147 (September, 1954).

Experience at Manetta Mills with a Davis & Furber Model L 84 inch woolen card is described.

Variable speed fancy drive

L. Mackereth. *Textile Mfr. 80:* 370, 373 (July, 1954).

A feature of this new drive is that changes in fancy speed can be made without stopping the machine either for putting on and taking off laps, or for wheel changing.

Woolen and worsted carding

Platts Bull. 8, No. 7: 217-218 (1954).

Cylinder/doffer ratios are discussed.

Continuous strippers

Saco-Lowell Bull. 26: 32-33 (July, 1954).

A table shows the results of tests with the Saco-Lowell continuous stripper.

Cotton cards

Platts Bull. 8, No. 7: 214-215 (1954).

Aids to maintenance: (1) a new flat turning device, and (2) shortening of flat chains.

DRAWING AND ROVING B 3

Can spinning system

O. Reinhardt. *Melliand Textilber. 35:* 971-974 (September, 1954); *in German.*

The author first gives an historical review of the development of the high-draft drawing system, and describes the combined drawing system of Casablancas (German patent DRP 369 620), the Casablancas double-apron system, the Hartmann system, and the Nastrofil spinning frame. He deals then in detail with the four-roller high-draft drawing system of Pfenningsberg, which forms the basis for the can spinning process. This system eliminates all flyer frame passages, since it processes the drawing frame sliver direct. Cans 0.3 meter in height are used; they are arranged in a creel on the ring spinning frame. 3 references.

Controlling yarn uniformity at the sliver lap

S. Z. Kung (Pao Hsing Cotton Mill Ltd., Hong Kong). *Textile Ind. 118:* 131-133 (October, 1954).

This method of control of long-term yarn variation at the sliver lap consists of weighing every lap doffed from the lap winder. These laps are classified as heavy, standard, or light. Four laps of the same classification are then run together on one four-delivery drawing frame. Tables and graphs are given showing sliver lap weight variations, standard weights at various humidities, and effect of changes in relative humidity on sliver lap weight.

Fiber blending in worsted drawing

W. Hodgson (Provincial Institute of Textiles, Ontario, Canada). *Textile Merc. 131:* 594-596 (October 1, 1954); *Canadian Textile Seminar Papers 4:* 38-39 (1954).

In an attempt to ascertain and evaluate the effect of reduced doublings and operations on the degree of blending in a mixture yarn, a 60's quality grey blend, comprised of 20 per cent black and 80 per cent white, was processed in ten different ways to 1/16's worsted count yarn which were knitted into a jersey fabric. Fabric lengths of each were knitted consecutively on one machine without change of machine settings. The fabrics were evaluated for degree of blending by experienced observers and by means of a photoelectric reflection meter.

Studies on apron drafting. Parts 1 and 2. On the irregular speed of the apron band. Part 3. Sliver unevenness in relation to irregular motion of the apron band

T. Takizawa and M. Kobayashi. *J. Soc. Textile Cellulose Ind. Japan 10:* 287-290, 340-344, 403-407 (1954); *in Japanese (English summary).*

Studies on the drafting of sliver. Part 1. The equation of drafting

S. Ishikawa and M. Tabata. *J. Soc. Textile Cellulose Ind. Japan 10:* 344-347 (August, 1954); *in Japanese (English summary).*

Study of the fiber length distribution in woolen condenser slubbing

F. Monfort. *J. Textile Inst. 45:* P568-P580 (September, 1954).

By using a numerical sampling method (cut squaring) for the fibers in condenser slubbings and by measuring the length of the fibers by the method of the Wool Industries Research Association, it has been found possible to fit to the experimental values obtained a general theoretical distribution of an exponential type (a *L*-shaped curve). 7 references.

SPINNING. WINDING. TWISTING B 4

Spinning on the ring frame: limitations to production

S. A. Alim (Azamjahi Mills, India). *Textile Wkly. 54:* 805-808 (September 10, 1954); 887-894 (September 17, 1954).

A survey of traveler speed, spindle speed, variable speed drive, traveler size, high drafting, twist construction, settings, and yarn strength.

The Thieron double ring system for spinning and twisting

B. A. Struch. *Tex 13, No. 5:* 533-535 (1954); *in Dutch.* Through *Brit. Cotton Ind. Research Assoc. 34:* 676 (September 15, 1954).

The patented system (L. Thieron & Sons. Eupen, Belgium, and Breda, Holland) is claimed to increase production by 10-25 per cent, and to improve the quality of the product. The mechanism, theoretical principles and advantages of the system (reduction of the maximum draft tension, increase of yarn elasticity by 20-80 per cent, almost complete elimination of knots, and a constant and small twisting zone) are described and illustrations are given.

Whitin Dinamic spindle

Whitin Rev. 21: 41-47 (September-October, 1954).

Designed for carrying extremely heavy packages ranging from 6 to 13 pounds at speeds which

normally were considered high for 3 or 4 pound packages.

Handbook of twisting. Chapter 3. Part 2. Angle of twist

N. Truslow. *Textile Bull. 80:* 115-117 (September, 1954).

New heavy duty uptwister

S. and E. Scragg Ltd. *Textile Merc. 131:* 554-557 (September 24, 1954); *Textile Wkly. 54:* 964-968 (September 24, 1954).

This double-decked machine, is designed to spin from packages of up to 3½ lbs. at speeds of 15,000 rpm. and above.

Production in twisting departments. Part 2

Wool Record 86: 563 (September 2, 1954).

A brief description of the twisting of woolen and compound yarns.

GENERAL B 5

Abrasion damage of textile fibers

G. Susich. U. S. Office of the Quartermaster General. Research and Development Division. Textiles, Clothing and Footwear Branch. January, 1954. 41p. Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. $1.00. PB 111 408. Textile series report no. 85.

The inherent abrasion behavior of 14 different textile materials in the form of yarns was investigated and expressed by the abrasion damage, which is the opposite of abrasion resistance. This was measured quantitatively by the fiber fineness (grex) destroyed in flexing around a steel bar under standardized conditions.

Hi-bulk Acrilan for outerwear

R. A. Smith (American Viscose Corp.). *Knitter 18:* 52-54 (September, 1954).

The author discusses the manufacture of Hi-bulk Acrilan yarn by the Perlok stretch-break and the Warner & Swasey converter methods.

On the torsional resilience stored in spun yarns: a basic study of twist-setting

G. Osawa. *J. Soc. Textile Cellulose Ind. Japan 10:* 352-356 (August, 1954); *in Japanese (English summary).*

Relation between variation of density and thickness of slivers, rovings and yarns

S. Ishikawa and M. Tabata. *J. Soc. Textile Cellulose Ind. Japan 10:* 356-360 (August, 1954); *in Japanese (English summary).*

Torsional rigidity measured on strands of textile fibers

D. De Meulemeester, G. Raes and G. Declercq. *Ann. Sci. Textile Belges 2, No. 1:* 5-49 (1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 696 (September 15, 1954).

The torsional rigidity of bast and hard fibers was measured to obtain a criterion of the spinnability of these fibers. The method described consists in measuring the torsional moment necessary to twist a strand of fibers through a certain angle. The results obtained on studying the effects of the torsional moment, the load applied to the strand, and the number of fibers in the strand confirm the theoretical deductions with regard to the angle of twist, load and number of fibers. The tests carried out on strands should be very carefully interpreted when used in determining the rigidity of materials.

Metallic yarn

Am. Textile Reptr. 68: 67-75, 80 (October 21, 1954).

A survey of the development, growth, and present status of the metallic yarn industry.

Use of colored fibers in yarns

H. Beevers. *J. Textile Inst. 45:* P462-P479 (August, 1954).

This paper deals with the use of colored fibers in the wool industry. It covers methods of mixing, worsted color matching, the making of specialty colored worsted yarns and the effects of various factors on the appearance of colored yarns.

Blending effect in woolen opening

E. Sattler. *Melliand Textilber. 35:* 987-989 (September, 1954); *in German.*

The author first gives a schematic representation of the blending process to prove theoretically that the improvement in the degree of blending decreases with each successive passage. The same applies also to an increase in the thickness of the fiber layers in the mixing rooms. The analysis of the smallest units of a batch gives a Gaussian curve when the frequency of the possible blending ratios are plotted in the form of a graph. A comprehensive series of tests corresponding exactly to normal mill practice confirms these findings and gives clearly arranged diagrams to demonstrate the successful result of blending.

Blends of wool and man-made fibers. Part 1. Blending

Textile Recorder 72: 78-80 (September, 1954).

The first of a series of articles which will discuss some of the problems arising at all stages in the processing on the woolen system of blends of wool and man-made fibers.

FABRICS C

WARPING, SLASHING, YARN PREPARATION C 1

Influence of the drying temperature on the solubility of sizes

H. A. Wannow. *Deut. Textilgewerbe 53:* 95 (1951); *in German.* Through *Chem. Abstracts 48:* 11797 (October 10, 1954).

The influence of over-drying on the solubility of fibers artificially coated with glue or starch is discussed on the basis of tabular data. The solubility of both these sizes in water is shown to be reduced by brief heating. The enzymic decomposition of the starch film by diastase proceeds more slowly in the case of cornified material than in the case of the more carefully treated. Cornification not only causes undesirable brittleness but also reduces the solubility of the size film.

Notes on starches for sizing

Textile Mfr. 80: 478-480, 482 (September, 1954).

In these notes factors such as swelling and cooking properties, viscosity, film formation adhesiveness, etc., are discussed in relation to the use of starch pastes for sizing.

WEAVING C 2

Analysis of straight picking motion apparatus

Y. Miura. *J. Soc. Textile Cellulose Ind. Japan 10:* 407-409 (September, 1954); *in Japanese (English summary).*

Circular looms

A.T.C. Robinson. *Skinner's Silk and Rayon Record 28:* 966-968 (September, 1954).

The author discusses several different types of circular looms at present being commercially produced and considers their efficiency as weaving machines and also their manufacturing limitations.

Dynamical studies on power loom motions. Part 5. Influence of power loom motions on crank shaft driving torque and crank shaft speed. Theoretical investigation into the effect of the lay motion

E. Kuze. *J. Soc. Textile Cellulose Ind. Japan 10, No. 5:* 215-225 (1954); *in Japanese (English summary).*

Electronic loom-timing indicator

British Rayon Research Assoc. *Textile Wkly. 54:* 1072-1076 (October 1, 1954).

The indicator is designed to give a continuous display of the relative timing of loom motions while the loom is running. It works on the same principles as television, except that, instead of a horizontal scan, a radial scan is used since this is very like a loom tackler's circular timing diagram, in which the motions of the heddles, lay, and shuttle are referred to the rotation of the main shaft. Diagrams. Photographs.

Jute and linen weaving. Part 2. Chapter 10. Beating-up the weft threads

T. Woodhouse and T. Milne. *Textile Quart. 4:* 154-160 (September, 1954).

Selvage motions

W. Middlebrook. *Textile Mfr. 80:* 455-457 (September, 1954).

Various motions are detailed including the boat, plain and crossrod types, Wilkinson's plain selvage motion, the Walverden and repp edge motions.

KNITTING C 3

Color and design in knitwear

J. C. H. Hurd. *J. Textile Inst. 45:* P480-P496 (August, 1954).

The elementary principles involved in producing ornamentation in stitch and color and the design units used are considered. The paper covers broadly the various methods of introducing color and design into the knitted structure within the limits imposed by the machinery employed.

Guide to fixing Banner SCP-51 knitting machines. Part 1

C. C. Auton (Fairview Hosiery Mills). *Textile Ind. 118:* 154-160 (October, 1954).

Movement timing and control. Part 2. Circular machines making stitch-shaped underwear

J. B. Lancashire. *Textile Recorder 72:* 81-82 (September, 1954).

Principles of weft knitting. Part 16. Fully-fashioned hose manufacture

S. B. Bradley. *Brit. Rayon & Silk J. 31:* 47-51 (August, 1954).

Variations on the round heel theme are discussed. Three more styles, including the Berkshire heel, are given. Diagrams.

Tricot pattern chains

F. Schmidt. *Textile World 104:* 110-111, 195-196 (October, 1954).

To obtain maximum efficiency in scope of design and speed of production of tricot fabrics, lay chain out on a board, use two-, three-, and four-times movements, and time chain to guide bars correctly.

GENERAL C 4

Mechanics of elastic performance of textile materials: relation of certain geometric factors to the tear strength of woven fabrics

N. A. Teixeira, M. M. Platt and W. J. Hamburger. U. S. Office of the Quartermaster General. Research and Development Division. Textiles, Clothing and Footwear Branch. 1954. 61p. Available from Office of Technical Services, U. S. Dept. of Commerce, Washington 25, D. C. $2.00. PB 111 409. Textile series report no. 86.

Tongue-tear tests were made on samples of acetate fabrics, varying certain controlled factors: weave, texture, yarn twist and yarn structure. An analysis of the resulting experimental data showed certain relationships between these fabric factors and tear strength. A qualitative discussion was made of tearing action—the influence on tear strength of various types of fabric distortion at or near the tear, such as: yarn pull-out force; crimp; cover factors; and dimensional stability in the plane of the fabric.

Weathering of cellulose acetate

J. B. Reid (British Rayon Research Assoc.). *J. Textile Inst. 45:* T665-T677 (September, 1954).

Weathering is defined as the changes which take place in cellulose acetate fabrics delustred prior to dyeing and which give rise to a defect consisting of a series of light or dark bars or patches on the finished piece. It is shown that weathering is due to uneven exposure of loom-state cellulose acetate fabrics to moisture condensation or to light. Practical methods of avoiding or remedying condensation weathering are considered. This work forms part of the program of technological research at the British Rayon Research Association. 6 references.

Oil stains in cloth

W. C. Westbrook. *Textile World 104:* 88-89, 178-180 (October, 1954).

Sources of stains and how to prevent them.

Oil stains on wool piece-goods

F. Jordinson. *Wool Record 86:* 680-684 (September 16, 1954).

Some methods of removal are discussed.

Ancillary equipment and accessories for braiding

D. Brunnschweiler. *Skinner's Silk and Rayon Record 28:* 937-940 (September, 1954).

A review of modern British and American equipment.

Mohair pile sealskin fabric. Part 1

Dyer 112: 353-355 (September 3, 1954).

Dyeing cotton warp and weft for the backing cloth and the effect of pressure steaming on mohair pile.

Mohair pile sealskin fabric. Part 2

Dyer 112: 431-432 (September 17, 1954).

Lacquering to increase luster, "cladding processes", and printed animal pelt markings.

Cloth setting reconsidered. Part 11

S. Brierley. *Textile Mfr. 80:* 452-454 (September, 1954).

Milling technique varies considerably and the possibilities of adjustment are examined. In making milled worsted cloths it is common practice to ease the structure a little in weaving, thus reducing the weaving firmness, and increasing the width shrinkage and sometimes the warp shrinkage.

Design in woven fabrics. Part 22. Modifications of Reiser's method for constructing crepe weaves

D. C. Snowden. *Wool Rev. 27:* 20-21 (September, 1954).

Designer's approach to color

A. Morton. *J. Textile Inst. 45:* P497-P503 (August, 1954).

The designer is the representative within industry of the consumer, sensitive to what the consumer wants, or will want a year or so hence, and trained to know how to get it made through the processes of industrial production.

Further studies in textile design. Part 9. Extra warp figuring

Textile Recorder 72: 86-88 (September, 1954).

Ornamentation of apparel fabrics

V. Lobl and E. Waller. *Modern Textiles Mag. 35:* 31-32, 84-86 (September, 1954).

The first in a series on textile design which will comprise Modern Textiles Handbook no. 5. Decorating effects on plain woven cloth are considered, including direction of twist and optical effects of simple S and Z yarns.

Ornamenting by cut-out patterns

A. Johnson and J. Seidler. *Textile Mfr. 80:*

450-451 (September, 1954).

Description of a new method of ornamenting felted floor coverings where in the final development—employing cut-out units—the interchanged patterns are attached to the ground web by adhesion to a common foundation fabric.

Pleating and pleat retention of woven and knitted fabrics containing Acrilan, rayon, nylon, acetate and other fibers

J. M. Roughan. *Papers Am. Assoc. Textile Technol. 9:* 155-168 (September, 1954).

The history of pleating is first briefly surveyed. The paper then takes up the results of a wear testing program with 36 pleated skirts in the Textile Research Dept. of the American Viscose Corp. Photographs were taken after each wearing period. Discussion.

Textile scaffolding threads. Part 32. Weave changes by thread removal

A. Johnson. *Skinner's Silk and Rayon Record 28:* 958-959 (September, 1954).

Cross-dyed effects are discussed.

FINISHES D

WET PROCESSES D 1

Application of resins to textiles

A. R. Smith (British Industrial Plastics Ltd.). *J. Soc. Dyers Colourists 70:* 381-391 (September, 1954).

The nature of thermoplastic and thermosetting resins is discussed together with the chemical reactions involved in their preparation. The application of thermosetting resins to cellulosic fabrics for the production of crease-resistant, dimensionally stable, and permanently glazed and embossed fabrics is outlined, while their use for the prevention of felting in wool fabrics and for the permanent stiffening of various types of textile materials is also considered. The use of thermoplastic resins in the treatment of textiles is discussed, and finally a number of special applications of synthetic resins in the production of permanent showerproof, fire-resistant, and other finishes is briefly outlined. 77 references.

Problems in resin-finishing fabrics

A. Silver (Brewster Finishing Co.). *Am. Dyestuff Reptr. 43:* P697-P700 (October 11, 1954).

The application of resin finishes on textiles is discussed from the practical and technological point of view without chemical formulas or theory. Purposes and uses of different finishes on various types of fabrics are considered, with an explanation of the principles and steps followed in application. The most common problems and pitfalls encountered in resin finishing are discussed, including especially the question of catalysts, the development of odors, dyestuff fastness properties, dusting, uniformity, proper framing, and curing.

Studies on the resin formation within the rayon fiber by specific gravity measurement

N. Azuma, H. Tonami and D. Yokota. *J. Soc. Textile Cellulose Ind. Japan 10:* 310-313 (July, 1954); *in Japanese (English summary).*

Cotton: developments in finishing. Part 3

A. Bolgiani. *Textile Mfr. 80:* 483-486 (September, 1954).

Continuous dyeing, printing, special finishing.

Dyeing and finishing of knitted fabrics

J. Neubert. *Textile J. Australia 29:* 706-719 (August 20, 1954).

Information is given for the practical dyer on questions relating to the dyeing and finishing of knitted fabrics made of cotton, viscose, cuprammonium, Perlon, nylon, and blends of these fibers. This is a translation of an article that appeared originally in German in *Textil-Praxis 7:* 964-971 (1952).

Glass fabric finishes vs. fiber sizings

L. M. Calhoun. *Modern Plastics 32:* 132-136 (October, 1954).

In the fibrous glass reinforced plastics industry there is considerable difference between fiber sizing and fabric finishes. Types of finishes are reviewed and the differences discussed.

Pigment binding power of textile finishing materials

L. Shapiro (American Polymer Co.). *Am. Dyestuff Reptr. 43:* P691-P696 (October 11, 1954).

Factors affecting the quantitative loss-on-tearing test method were studied by use of standard starch and filler compositions. Results in a given series were readily reproducible. The amount of dusting was found to depend principally on (1) type of binders, (2) type of fabric, (3) type of pigment and ratio to binder, and (4) softeners and modifiers added to the binder. There is no definite ratio at which the binder binds all the pigment to the fabric, but some dusting out occurs even at very low pigment-to-binder ratios. Dusting out is not selective but the dust contains binder and pigment in the same ratio originally present on the fabric. Thus, dusting must occur through decrease of adhesion and cohesion of the binder film on pigment loading. The effect of various types of starch additives was studied.

Polyvinyl acetate emulsions yield marked increases in binding power, and moderate additions to starch permitted great increases in pigmentation with no increase in tearing loss. 5 references.

Bleaching kinetics of chlorine-active compounds

F. Gasser and R. Muller. *Melliand Textilber. 35:* 1001-1005 (September, 1954); *in German.*

An attempt is made to draw up a criterion and a measure of the bleaching and fiber-tendering effect of chlorine-active textile bleaching agents. A possible method seems to be the critical observation of the concentration-time course curves of the bleach solution in the course of the bleaching process, and also the use of reaction speed equations. In this manner, interesting findings on the bleaching effects of sodium chlorite and activine can be obtained.

Modern bleaching techniques

Textile Merc. 131: 421-424 (September 3, 1954).

A brief survey of the desirable properties and chemical structure of optical bleaching agents. Some new benzoyl derivatives (BP 692 346 and 692 407) are described.

Modification of wool by the application of linear synthetic polyamides. Part 5. Pretreatment with ethanolic potassium hydroxide

J. Delmenico, D. L. C. Jackson and M. Lipson. *Textile Research J. 24:* 828-834 (September, 1954).

Ethanolic potassium hydroxide solutions in concentrations from 0.1% to 5.0% have been used to pretreat wool effectively for the application of *N*-alkoxymethyl polyamides to prevent felting shrinkage. The alcoholic alkali may be used purely as a pretreatment, or the alkali can be incorporated in the alcoholic resin solution. Even when the alkali pretreatment does not in itself reduce the felting shrinkage, effective shrinkproofing is obtained with less than 1% resin based on the weight of wool. 7 references. Parts 1-4 appeared in the March 1951, September 1951, September 1953 and July 1954 issues, respectively.

Flameproofing textiles

A. Schurch and A. Berger (Ciba AG, Switzerland). *Textil-Rundschau 9:* 251-254 (1954); *in German.* Through *Chem. Abstracts 48:* 11797 (October 10, 1954).

A review of modern commercial flameproofing methods and methods of testing the flammability of fabrics.

Mothproofing wool with DDT

A. S. Weatherburn and C. H. Bayley. *Soap and Chem. Specialties 30:* 141-144, 163-167 (September, 1954).

The compound DDT has recently become available in the form of water-dispersible concentrates suitable for use in laundering operations and the purpose of this work was to investigate the feasibility of applying DDT in this form during the laundering of woolen goods, and also to determine the resistance to moth attack of wool so treated. In view of the increasing use of synthetic detergents in the commercial laundering of wool, three detergents, two of the anionic type and one of the non-ionic type, were included, along with soap, in this study. 7 references.

Rot-proofing of cotton fabrics. Part 2

B. C. M. Dorset. *Textile Mfr. 80:* 474-477 (September, 1954).

Treatment with formaldehyde, esterification with acetic acid or phosphoric acid, and cyanoethylation are discussed. References to the literature.

Weathering characteristics of cotton fabrics containing inorganic compounds. Part 1. Chromic oxide and copper in inorganic and organic form

G. R. F. Rose and C. H. Bayley (National Research Council, Canada). *Textile Research J. 24:* 792-802 (September, 1954).

A study was made of the effect of outdoor weathering on unbleached and bleached cotton duck treated with (a) oxides of chromium and iron and copper carbonate, singly and in mixtures, (b) oxides of chromium and iron aftertreated with copper-containing organic fungicides, namely, copper naphthenate, copper 8-hydroxyquinolinolate, and the copper salt of dehydroabietyl amine, and (c) chromic oxide, copper 8-hydroxyquinolinolate, and mixtures of these. A limited amount of data was obtained with treatments on lightweight cellulosic fabrics. The data confirmed previous observations to the effect that the presence of chromium and copper, in inorganic form, confers marked protection against actinic breakdown of the cellulose and also prevents the severe loss of copper which, in the absence of chromium, occurs during weathering. These effects were also noted, in lesser degree, with chromium-treated fabrics aftertreated with copper-containing organic fungicides. The lightweight fabrics treated with inorganic chromium-copper showed resistance to actinic degradation, but underwent severe loss of copper. 16 references.

Wool: chemical changes during wet processing

A. J. Farnworth. *Textile J. Australia 27:* 223-227 (1952). Through *Chem. Abstracts 48:* 11067 (September 25, 1954).

Changes which occur in wool during scouring, carbonizing, and neutralizing were studied under normal mill conditions. Load extension properties (30% index), cystine and total N contents, and ability to take a permanent set were investigated. Results show that the extent of chemical degradation during wet-processing is very small and probably results only in a small amount of peptide chain hydrolysis.

Action of carroting agents

E. H. Mercer (Chester Beatty Research Institute). *(Letter to the Editor). J. Textile Inst. 45:* T719-T722 (September, 1954).

Historical notes on the wet-processing industry. Part 5. Sir William Perkin

S. M. Edelstein. *Am. Dyestuff Reptr. 43:* 517-519, 548 (August 16, 1954).

DYEING AND PRINTING D 2

Dyeing of cyanoethylated cotton: preliminary study

F. Fordemwalt and R. E. Kourtz. Bound Brook, N. J., Dyestuff Dept., American Cyanamid Co., 1954. 13p. Dyestuff technical bull. No. 837.

This preliminary study takes up differential dyeing tests, laboratory methods for applying vat dyes to cyanoethylated cotton, and the effects of various dyeing processes on cyanoethylated cotton. Tables. Colored photographs. 7 references.

Dyeing of fabrics made from Fibro and blends containing Fibro

R. A. McFarlane. *J. Textile Inst. 45:* P395-P414 (August, 1954).

Preferred conditions of scouring, dyeing and finishing of fabrics made from 100 per cent Fibro yarns and from Fibro blends with Seraceta, Fibrolane, and nylon are discussed and methods are outlined which are least likely to develop potential faults or give undue prominence to faults which may be present in the grey fabric. Attention is called to the importance of understanding and controlling all processes, and in particular those associated with chemical finishes, such as crease-resistant finishes.

Dyeing of yarns and fabrics containing mixed fibers

R. C. Cheetham and J. S. Ward. *J. Textile Inst. 45:* P380-P394 (August, 1954).

Increasing weights of yarn and fabric are being produced by blending of staple fibers. In this paper the authors have attempted first to examine in a general manner the problems of dyeing such blended materials. In the second part of the paper this treatment is extended to cover the dyeing of particular blends, namely, Fibro/wool, Fibro/-Fibrolane and wool/Fibrolane; and finally the general problem of dyeing three-fiber blends is briefly considered. 13 references.

Dyeing wool-synthetics blends. Part 1

H. D. Grimes. *Textile World 104:* 84-85 (October, 1954).

Dyeing procedures and types of dyes used depend on blend percentages and shades desired. Methods include (1) bringing only the wool up to full shade in a blend where the synthetic is buried in the fabric, (2) getting two-tone effects by dyeing wool-Dacron blends with chrome, metal-complex, or metallized dyes, (3) relustering Dynel in a blend by loop drying the fabric at 275 to 300°F. This article is based on a paper in *Canadian Textile Seminar Papers 4:* 72-76 (1954).

Factors affecting the absorption of disperse dyes by Dacron polyester fiber from aqueous baths

J. J. Iannarone, O. S. Larson and R. J. Thomas (E. I. du Pont de Nemours and Co.). *Am. Dyestuff Reptr. 43:* P650-P655 (September 27, 1954).

The authors have experimentally studied the factors affecting the absorption of disperse (acetate-type) dyes by Dacron polyester fiber from baths in which orthophenylphenol was employed as the carrier. It was found that, for a fixed percentage of carrier on weight of fiber at 205-208°F, or without a carrier at 250°F, dye absorption decreases with increase of dyeing volume. If the percentage of carrier is based on weight of solution, however, the absorption increases with increase of dyeing volume. When disperse dyes are used in combination with Dacron, each dye in the combination exhibits about the same distribution value between bath and fiber for the conditions involved as it does when applied alone. The rate of exhaustion of disperse dyes at 205-208°F apparently increases with an increase of carrier concentration. Concentrations of 3 to 6 grams per liter at 60:1 volume and 6 to 9 grams per liter at 20:1 volume give optimum dye absorption without any serious adverse effect on the fiber. The interesting claim is made by the authors that most disperse dyes are stable at 250°F and dye better at that temperature without a carrier than with orthophenylphenol or benzoic acid as carriers at 205-208°F. 12 references.

Fugitive tinting

W. Meitner and J. E. Taylor. *J. Textile Inst. 45:* P369-P379 (August, 1954).

The desirable properties of tints are considered under the headings: fugitivity; migration; ability to withstand heat treatments; fastness to light; color range. A section on methods of application is followed by consideration of the types of fugitive tints at present available. These are treated under the headings: pigments; normal dyes; and high-polymer dye complexes. A special section is devoted to casein dye complexes.

Investigation of sodium sulfoxylate-formaldehyde as the primary reducing agent in vat dyeing

R. D. Blum, Jr. *Am. Dyestuff Reptr. 43:* P525-P540 (August 16, 1954).

The object of this study was to determine the possibilities of the utilization of formaldehydesulfoxylate, both with and without hydrosulfite, in obtaining advantages in dyeing and to evaluate sulfoxylate dyeing with some vat dyestuffs in practical application. Determinations were made of the reduction potentials of sulfoxylate under dyeing conditions. At temperatures above 150°F these become comparable with those of the usual alkaline hydrosulfite baths employed below 150°F in the old conventional vat-dyeing methods. Laboratory procedures were worked out, which permitted production-scale batch dyeings at liquor ratios of 8:1 and 20:1. It is important in the use of sulfoxylate either alone in alkaline solution or in combination with hydrosulfite in alkaline solution that the optimum conditions for attaining penetration, levelness, and exhaustion be determined. Besides giving dyeings of fully equal shade, strength and fastness, the use of sulfoxylate in dyeing offers the following advantages: (1) easier and better control of exhaustion rate, (2) low strike, (3) increased leuco stability at high temperatures, particularly with halogenated indanthrones, and (4) increased stability of reducing agent. 22 references.

Investigations into the dyeing of hydrophobic fibers. Part 1

T. Vickerstaff. *Hexagon Digest No. 19:* 3-11 (July, 1954).

The effects of molecular size and dyeing temperature. 10 references.

Irgalan hot-dyeing process

H. R. Hirsbrunner (J. R. Geigy AG, Switzerland). *Textil-Rundschau 9:* 240-244 (1954); *in German.* Through *Chem. Abstracts 48:* 11792 (October 10, 1954).

Neutral-dyeing metallized dyes are applied to wool directly in a hot bath, starting at 85-95° and remaining above 80° during dyeing. Advantages are greater production rate and consistency of results.

Level dyeing with afterchrome dyes

I. D. Rattee. *J. Soc. Dyers Colourists 70:* 347-354 (August, 1954).

The rate of dyeing of the unchromed afterchrome dyes has been determined under different dyeing conditions. The properties of the afterchrome dyes during chroming and those of potassium dichromate itself have been examined. Some recommendations are made for improving the chroming stage of dyeing.

Piece dyeing and finishing of polyacrylonitrile fabrics

J. Muller. *Melliand Textilber. 35:* 1006-1012 (September, 1954); *in German.*

The object of the first experiments was to utilize pressure steaming for fixing the dyestuffs, since no suitable piece dyeing machine permitting the use of temperatures above 100°C was available. Very remarkable effects were obtained by pressure steaming, not only in the case of Anthrasol, Celliton, and Astrazol dyestuffs, but also when dyeing was performed by a modified technique of the cuprous-ion process used for acid dyestuffs. A new application for Anthrasol dyestuffs has been made possible by the observation that organophilic ester salts show a pronounced affinity for polyacrylonitrile fiber; on this basis, dyeing can be carried out at temperatures below the boil. Finally, the author deals with problems of fixation, water-repellent finishing, and antistatic finishing, and discusses experience gained in the field of dress materials containing PAN fibers.

Pneumatic mangle solves many dyehouse problems

C. Amidon (Rodney Hunt Machine Co.). *Am. Dyestuff Reptr. 43:* 673-674 (September 27, 1954).

Features of the Niptrol pneumatic mangle are described. The novel pneumatic method for equalizing pressure combined with the unusual characteristics of the soft roll makes the Niptrol pneumatic mangle fully suited for processing fabrics of cotton, linen, wool, acetate, or viscose filament, acetate-viscose blends, nylon, spun rayon, and other new synthetics.

Realizable color gamuts in dyeing

E. Atherton, D. A. Garrett and T. Vickerstaff. *J. Textile Inst. 45:* P350-P368 (August, 1954).

The limitations of color which can be produced on a particular fiber with any particular class of dye are well known to the practical dyer. In this paper the authors endeavor to present these facts in a more quantitative manner so that the limitations of different classes of dyes may be

clearly appreciated and the possibilities of future improvement assessed. The position of recent additions to the color range is also examined.

Redox potential and its importance in continuous vat dyeing

K. Neufang. *Melliand Textilber. 35:* 1012-1014 (September, 1954); *in German.*

In continuous vat dyeing, the state of reduction of the vat dyestuff on the running goods can be checked continuously be measuring the Redox potential with the aid of a platinum/calomel electrode. The author describes a method for carrying this out. The potentials are measured inside (at the center) and outside the steamer (at the delivery end). Tests have shown that the smaller the difference in potential of the measured values is, the better the results of dyeing will be in regard to depth of shade, levelling, etc.

Resists under Indigosols

P. Diserens. *Dyer 112:* 515-519 (October 1, 1954).

After a review of current practice, the author describes in detail the process in which the Indigosol is developed by the nitrite process and, after padding, the fabric is passed, without intermediate drying or steaming, directly into the dilute sulfuric acid bath, neutralized, washed and dried.

Spun-colored fibers and yarns

E. Butterworth and A. S. Cluley. *J. Textile Inst. 45:* P427-P461 (August, 1954).

The production and properties of colored fibers produced by incorporation of pigments and dyes in man-made fibers are discussed. The main characteristics of spun-colored fibers are described and the properties of pigments necessary in different processes are outlined. The scope of the textile uses and properties of pigmented viscose rayon and cellulose acetate fibers are given. Extension of the process follows to other fibers, difficult to dye by ordinary methods. A comparison is given of the cost of coloring by dyeing and pigmentation. The necessary limitation of shade range by pigmentation can be met in the case of staple fiber by blending of colored fibers and some considerations relating to blending are appended. The behavior of pigmented fibers exposed to light and weathering is discussed and compared with that of dyed fibers. The use of the properties of spun-colored fibers is stressed in relation to fabric design and subsequent processing. Future possible uses of spun-dyed fiber are suggested. 36 references.

Study of certain natural dyes. Part 1. The adsorption of Brazilwood and logwood coloring matters by fibers

F. M. Arshid, J. N. Desai, and others. *J. Soc. Dyers Colourists 70:* 392-401 (September, 1954).

A systematic investigation was undertaken to elucidate the details of the processes by which logwood black, in particular, is formed in the fiber. This natural coloring matter is still widely used and, moreover, its molecular structure bears some resemblance to that of natural tannins, so that its reactions with protein fibers and metals may have interest in other directions. 27 references.

Study of certain natural dyes. Part 2. Structure of the metallic lakes of the Brazilwood and logwood coloring matters

F. M. Arshid, R. F. Connelly, and others. *J. Soc. Dyers Colourists 70:* 402-412 (September, 1954).

17 references.

Tinctorial strength, depth (or apparent strength) of dyeings and money value of dyes

I. H. Godlove (General Aniline and Film Corp.). *Am. Dyestuff Reptr. 43:* P685-P690, P696 (October 11, 1954).

Based on the concept that *apparent strength* or *depth* of dyeing is measured by departure from white in a properly constructed visual color solid similar (but not identical) to the Munsell color solid, a simple empirical formula for calculation of apparent strengths (depths) from Munsell notations has been developed. It has been in fairly successful practice for over two years. The formula has been applied to a number of dyes of several classes and the average relation between ratio of depths and ratio of concentrations has been found for three classes. In the cases where a dye lot needs to be shaded slightly in mill or plant, it is shown what direction this shading should take to avoid penalizing the product by not bringing about optimum shading to obtain maximum apparent strength. 6 references.

Ultrasonics and sound vibrations in bleaching and dyeing

C. Weimann. *Teintex 19, No. 6:* 437-447 (1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 688 (September 15, 1954).

Publications on work carried out on the various uses of ultrasonics and their effects on the dispersion of dyes and on the textile fibers are reviewed, and reference is made to BP 383 015 relating to the application of vibratory methods in dyeing very dense fabrics, and to BP 699 480 describing a new type of vibrator for dyeing baths.

The new methods may be of interest in the case of difficultly dispersible dyes and in dyeing the new synthetic fibers that have no affinity for dyes.

Union dyeing blends of wool and synthetic fibers with water-soluble and disperse dyes

E. A. Leonard. *Am. Dyestuff Reptr. 43:* P656-P672 (September 27, 1954).

Specifically including in its scope the three blends, wool-acetate, wool-Dynel and wool-Dacron, this paper reports on the following points: (1) an investigation of the factors that affect the degree of staining of wool by disperse dyes, (2) a study of processes for dyeing wool-acetate, wool-Dynel, and wool-Dacron unions to obtain desirable fastness, (3) the description of several practical applications on a plant scale, of dye selection and of dyeing processes for the blends mentioned. A wide range of colors for socks, suitings, and floor coverings is included. The conclusion is drawn that union-dyed wool-acetate, wool-Dynel and wool-Dacron fabrics of satisfactory colorfastness can be produced. 13 references.

What's new in dyestuffs?

J. Campbell. *Modern Textiles Mag. 35:* 34-35, 66 (September, 1954).

A summary of dyeing developments during the past year for rayon, acetate, nylon, the acrylics, and Dacron.

DRY PROCESSES D 3

German textile drying system shows increased efficiency

Vits-Elektro GmbH, Germany. *Skinner's Silk and Rayon Record 28:* 952-954 (September, 1954).

The Vits stenter and its system of drying the fabric with superheated steam are described.

GENERAL D 4

Colors and finishes

Daily News Record No. 200, Section 2: 1-44 (October 14, 1954).

This special section contains articles on various aspects of finishing, including chemistry, machinery, research, etc. A list of *Trade names of finishes of textiles,* on pages 30-44, includes trade name, manufacturer, types of fabrics to which the finish can be applied, and properties.

Flock printing machines

A. H. Wirth Faserstoff-Fabrik, Germany. *Textile Wkly. 54:* 740 (September 3, 1954).

The AWR traveling flock-printing carriage is designed for the production of velvet effects by means of the electrostatic flocking process. The carriage is used to flock materials in long lengths on silk screen printing tables. Various models are briefly described.

TESTING AND MEASUREMENT E

FIBERS E 1

Cotton quality and fiber properties. Part 1. Effect of mechanical blending on cotton fiber properties

H. Wakeham, W. P. Virgin and N. Spicer (Textile Research Institute). *Textile Research J. 24:* 802-809 (September, 1954).

A serious problem in single-fiber testing is the preparation of a homogeneous sample from which fibers may be selected in a random manner. Mechanical blenders, of the type developed for cotton by the U. S. Department of Agriculture, greatly improve the homogeneity of a bulk fiber sample. In the present work tests were made to show what changes in single-fiber properties result from the mechanical action of such a blender. Relatively small changes in mechanical behavior of the cotton fibers were observed as a result of blending. With the conventional three passes through the blender a small decrease in breaking load (less than 10%) was found, with corresponding changes in breaking stress and energy to break. A reduction of fiber crimp with a slight increase in fiber length by the fiber array method was also noted. 11 references.

Identification of textile and related fibers

J. E. Ford and W. J. Roff (British Cotton Ind. Research Assoc.). *J. Textile Inst. 45:* T580-T623 (August, 1954).

Fiber identification is discussed and a simple system of analysis is presented. Separation into natural or man-made fibers is first effected with the aid of the microscope; natural fibers are then separated (largely by morphological distinctions) into six characteristic groups, in each of which individual types are identified by chemical or morphological tests; man-made fibers are also separated (by thermoplasticity, and the presence of chlorine or nitrogen) into six groups, in which individual types are identified largely by chemical distinctions. Features of the system are the small number of steps required to identify any fiber, and the provision of confirmatory tests. Almost all the textile and related fibers likely to be encountered at the present time have been considered, including some forty fibers from natural

sources and thirty made by man. 64 photomicrographs of fibers are also included.

Measurement of fiber cohesion

G. Grimshaw (Imperial Chemical Industries). *Hexagon Digest No. 19:* 18-23 (July, 1954).

An instrument for measuring fiber cohesion under conditions approaching those used in normal textile processing has been constructed with an electronic measuring system. The instrument is described and illustrated. Draw force measurements are used to study processing behavior and to evaluate fiber finishes. 3 references.

Solubility of wool in urea-bisulfite solution and its use as a measure of fiber modification

K. Lees and F. F. Elsworth. *(Letter to the Editor). J. Soc. Dyers Colourists 70:* 354-355 (August, 1954).

Synthetic fibers: properties and microscopical identification reactions

W. Bobeth. *Faserforsch. u. Textiltech. 5, No. 3:* 115-130; *No. 4:* 168-170 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 569 (July 31, 1954).

The most important synthetic fibers and their properties are reviewed and microscopical reactions in swelling agents and solvents are described in detail for polyvinyl chloride, mixed polymerizates (Dynel and Saran), polyacrylonitrile, polyamide, and polyester fibers. All the synthetic fibers examined have the ability of forming a pseudolumen in special embedding agents, each individual type of fiber showing different additional characteristics (wrinkling, streak formation, needle formation, etc.). These microreactions (tabulated and shown on photomicrographs) can be used for analytical purposes. 18 references.

YARNS E 2

Neptel

West Point Mfg. Co. Research Division. *Textile Ind. 118:* 142-149 (October, 1954).

The Neptel counts the imperfections in fifty yards of yarn with a high degree of reliability. The results obtained have been correlated with the nep count in card webs and in yarns with correlation coefficients of 0.86 and 0.90, respectively. A variety of applications of the instrument in helping to solve production problems have been presented. Among these are differences in card speeds, picker beater speeds, fiber properties, spinning systems. Photographs, diagrams, graphs, and tables explain the features, operation, and applications of the Neptel.

Twist multiplier for maximum strength

C. B. Landstreet, P. R. Ewald, K. L. Hertel and C. S. Craven. *Textile World 104:* 106-107, 213 (October, 1954).

A chart for finding the twist multiplier for producing yarn with maximum strength has been developed. To use the chart, two cotton-fiber properties, mean length from the Fibrograph and fineness from the Arealometer, must be determined.

Yarn irregularity testing by a capacitance method (Gleichmassigkeits-prufung am laufenden Faden auf elektro-kapazitiver Basis).

K. Meyer and H. Langer. Leipzig: Fachbuchverlag, 1953. 84p. In German. Through *Brit. Cotton Ind. Research Assoc. 34:* 570 (July 31, 1954).

This publication relates particularly to the use of the Uster tester.

FABRICS E 3

Comparison of the sulfuric acid and sodium hydroxide methods for the analysis of wool admixed with cotton and viscose rayon

E. Horowitz and J. Mandel (U. S. National Bureau of Standards). *Am. Dyestuff Reptr. 43:* 613-615 (September 13, 1954).

In the manufacture of blankets consisting of mixtures of wool, cotton and viscose rayon it is necessary to determine the percentage of wool. This study compares the sulfuric acid and sodium hydroxide methods with respect to their suitability for the analysis of low concentrations of wool in the presence of other fibers. From analyses on known samples of fiber mixtures, the standard deviation is calculated to be 0.28 per cent wool for the acid method and 0.37 per cent wool for the alkali method. The relative merits of each method are discussed. 7 references.

Continuous measurement of cloth width

B. Jiewertz (Swedish Institute of Textile Research). *J. Textile Inst. 45:* T696-T699 (September, 1954).

The apparatus described has been developed for continuous measurement of the width of running fabrics in textile industries. The fabric can also move, within limits, at right angles to the direction of running. The width is measured with an accuracy of $\pm$ 0.3 cm.

GENERAL E 4

Application of radiochemical techniques to the study of the interaction of hair fibers

with aqueous solutions

P. B. Stam and H. J. White, Jr. *Textile Research J. 24:* 785-791 (September, 1954).

Radioactive tracer techniques have proved to be uniquely adaptable to the study of the interaction of hair fibers with various aqueous solutions including dye baths. NaBr solutions, NaBr-HBr solutions, NaCl solutions, and an acid dye bath containing a sulfur-labelled acid dye for wool were used. It was found that appreciable amounts of NaBr were absorbed by hair from solution with a linear relationship existing between the equilibrium amount absorbed and the molarity of the treating solution. If acidic or basic solutions were used, additional absorption resulting from the well-known amphoteric properties of keratin was observed. In a preliminary experiment, the absorption of each of three components of an acid dye bath was followed by taking advantage of differences in radioactive behavior of the three species. Certain rate processes have also been followed. 9 references.

Detergency measurement using artificially-soiled cloths

F. L. Diehl and J. B. Crowe (Procter and Gamble Co.). *J. Am. Oil Chemists Soc. 31:* 404-408 (October, 1954).

Four types of artificially-soiled cloths are compared in their ability to evaluate cleaning of representative detergent products. Results show that artificially-soiled cloths must be used advisedly. There is no substitute for actual performance tests of detergent products under practical conditions. At best, artificially-soiled cloths are useful for "screening" purposes where positive test results are confirmed by practical tests. 15 references.

Detergent efficiency—interpretation of reflectance curves

O. C. Bacon and J. E. Smith (E. I. du Pont de Nemours and Co.). *Am. Dyestuff Reptr. 43:* P619-P622 (September 13, 1954).

A method is described for obtaining, directly from reflectance data, the relative efficiencies of detergents for removing soil. The related problems of redeposition and soil suspending power are not covered in this paper. The method is based on the difference in mechanical work required to give the same results with various detergents when all other washing conditions are held constant. 4 references.

Determination of the ionic type of synthetic surface active compounds

A. S. Weatherburn. *Can. Textile J. 71:* 45-46 (August 13, 1954).

This rapid test, which is an adaptation of the method of Epton for the quantitative determination of anionic surface compounds, uses methylene blue.

New recommended test conditions and operating practices for light fastness tests in the Fade-Ometer

J. E. Norton (Atlas Electric Devices Co.). *Am. Dyestuff Reptr. 43:* P628-P631 (September 13, 1954).

The author points out that the AATCC standard sun test is really an accelerated test and that some conditions—especially that of specimen temperature—are not always the same during a sun test. This can lead to variable results in ratings of samples against the Blue Standards. Such variations in fading may also take place in testing light fastness in a Fade-Ometer, plus other variations proceeding from faulty operation of the Fade-Ometer. Directions are given for operating a Fade-Ometer for least variation and for checking the results to obtain good uniformity of fading in day-to-day operation and between different Fade-Ometers. The correlation with properly conducted sun tests will then also be very good.

Standard methods for the removal of added matter from textiles

J. Textile Inst. 45: S37-S42 (September, 1954).

It is common practice for textile fibers, yarns and fabrics to be treated with processing aids or finishes, or both. These may result in an appreciable increase in weight and modify other properties at the same time. Therefore, the removal of these added matters is necessary before such characteristics as yarn count and the weights of warp and weft per unit area can be determined. Although this standard was prepared primarily with these needs in view, the methods described may be used for other purposes.

INDUSTRIAL ENGINEERING F

PRODUCTION F 2

Cost accounting in the textile industry

K. R. Aravamuthan. *Indian Textile J. 64:* 621-625 (July, 1954).

Suggests a basic costing method which could be sufficiently elastic to lend itself for practical application in a textile mill with such modifications as may be necessary to suit individual needs.

System for estimating costs quickly

D. Reed. *Textile Ind. 118:* 161-166 (October, 1954).

How one small, fancy, filament synthetic Jacquard weaving plant devised a streamlined method and a new approach for applying the cost data to the cost form, so that cost estimates might be made quickly.

QUALITY AND WASTE F 3

Are you making best use of sampling inspection?

N. L. Enrick. *Plant Administration 14, No. 9:* 83-85 (1954).

Present methods and procedures for proper industrial sampling, including sampling plans and operating characteristic curves. The operating characteristic curves correspond to the sampling plans and reveal the two types of sampling risks involved in each plan; viz., accepting a bad lot and rejecting a good lot. The plans presented are of the sequential type, which have the advantage of involving the lowest amount of inspection for a relative sampling risk. Diagrams illustrate the difference of purpose and effect between lot-by-lot sampling, 100% inspection and process inspection, and when each type is preferable to use in the mill.

Waste-control program for the cotton spinning room

D. E. Baylis. *Textile World 104:* 102-103, 190-192 (October, 1954).

The basic method consists of analyzing present methods, making ends down studies, calculating new waste standards, and selling the operators on these standards.

GENERAL F 4

Mill of the future. No. 4: Weaving mill has circular design

K. Arunvongse. *Textile Age 18:* 60 (October, 1954).

Modern mill design no. 4 in a series based on work done by students in the School of Architecture at the Massachusetts Institute of Technology.

Pollution reduction in cotton finishing wastes through process chemical changes

J. W. Masselli and M. G. Burford. *Sewage and Ind. Wastes 26:* 1109-1116 (September, 1954).

An inventory and B.O.D. survey of the process chemicals actually used in the plant was made in conjunction with an analytical survey on a cotton finishing mill which processed fairly heavy cloth (0.56 lb. per yard). Of this cloth, 72 per cent was printed and 28 per cent was dyed. Data are given and discussed. The process chemical inventory and B.O.D. survey proves useful in these investigations because of the relative ease with which it may be done and because of the additional information it provides on the constituents and characteristics of the wastes. With it, one may determine why the B.O.D. is present and whether it may be eliminated by process chemical substitution. In addition, after sufficient data are collected to indicate average consumption on these chemicals, use of excesses may be quickly detected. 4 references.

Pollution sources in wool scouring and finishing mills and their reduction through process and process chemical changes

J. W. Masselli and M. G. Burford. Boston: New England Interstate Water Pollution Control Commission, 1954. 31p.

The ultimate aim of this survey was to determine the polluting characteristics of each waste from wool scouring and finishing plants, the extent of its contribution to the total pollution, its polluting power based on the weight of cloth treated, the comparison of alternate processes, the original source of the polluting substances, the polluting characteristics of the pure processing chemicals, the possibility of substituting low oxygen-demanding chemicals for high ones, and the water demand of each process. The two mills, one woolen and one worsted, investigated in this report were considered to be typical of the wool mills of the industry. Both were scouring and finishing mills and the new synthetic processing agents were being investigated and also being routinely used in their processing procedures. 28 references.

Treating desizing waste for sewage disposal

N. L. Nemerow (N. C. State College). *Textile World 104:* 121 (October, 1954).

The enzyme solution and the washer rinse water mixed can be effectively treated with adapted micro-organisms under aeration.

SCIENCES G

CHEMISTRY G 1

Action on wool fibers of strong solutions of urea containing reducing agents

E. H. Mercer. *Textile Research J. 24:* 835-841 (September, 1954).

Saturated aqueous solutions of urea containing reducing agents dissolve about 25% of wool fiber at pH 8. The extracted protein is removed from the less stabilized fraction of the cortex—the orthocortex and the residue consists of the cuticular sheath, the cortical cell membranes of the

orthocortex, and the resistant paracortex. The paracortex may supercontract, but does not dissolve at pH 8 and 65°C. When re-extended, such residues yield cross β-type x-ray patterns. The protein first dissolved at room temperature when regenerated is a tacky, gumlike material devoid of fiber-forming properties. This protein in the urea solution at pH 8 is slowly converted into a derivative of very different properties. A similar preparation results when the original extraction is carried out at 65°C. This modified protein is strongly acid in character and may be formed into fibers yielding an α-type x-ray pattern. It is suggested that this change is due to the hydrolysis of the acid amide groups of the native keratin to free acidic sidechains. 23 references.

Color of some simple anthraquinone derivatives

H. H. Sumner. *Hexagon Digest No. 19:* 12-17 (July, 1954).

Examples are given showing how the concepts of electron donation and excitation energy can account for many of the observed effects of chemical constitution on color in simple anthraquinone compounds. 9 references.

Degree of polymerization and its distribution in cellulose rayons. Parts 1 and 2

W. G. Harland. *J. Textile Inst. 45:* T678-T695 (September, 1954).

These papers form part of the program of fundamental research at the British Cotton Industry Research Association. The object of the work in Parts 1-6 of the series is to determine the distribution of the degrees of polymerization in four commercially available cellulose rayons. Part 1 deals with the nitration of cellulose with minimum degradation and Part 2 examines the relation between the nitrogen content and the intrinsic viscosity of cellulose nitrate. References.

Effect of time and temperature of presoaking and the temperature of acetylation on the rate and degree of acetylation of cotton fibers

J. L. Taylor and E. D. Owens (Georgia Institute of Technology). *Textile Research J. 24:* 810-819 (September, 1954).

The purpose of this study was to determine (1) the effect of the time and temperature of presoaking on the rate and degree of acetylation of different varieties of cotton fibers with the time and temperature of the acetylation held constant and (2) to study the effect of the acetylation temperature on the degree of acetylation under constant conditions of presoaking. 13 references.

On the preparation of cellulose III with ethylamine

L. Segal (Southern Regional Research Laboratory). *(Letter to the Editor). Textile Research J. 24:* 861-862 (September, 1954).

Resistance of partially acetylated cotton fabric to nitrogen dioxide and to hydrogen chloride

W. T. Schreiber, A. L. Bullock and W. L. Ward (Southern Regional Research Laboratory). *Textile Research J. 24:* 819-822 (September, 1954).

Exposure of partially acetylated cotton to nitrogen dioxide and air mixtures, and to hydrogen chloride and air mixtures, showed that this chemically modified cotton is resistant to the action of these gases as compared to ordinary bleached cotton. This was shown by data on breaking strength, cuprammonium fluidity, carboxyl content, and copper number. A possible explanation for the resistance of partially acetylated cotton to oxidation and hydrolysis is discussed. 7 references.

Surfactants in the textile industry

H. C. Borghetty (Rohm and Haas Co.). *Am. Dyestuff Reptr. 43:* P623-P627 (September 13, 1954).

The author discusses the requirements of surface-active agents for the majority of textile operations and places particular emphasis on their adaptability for specific end uses. He covers the practical aspects of the preparation, dyeing and finishing of fibers and fabrics and calls attention to the improvements that can be obtained by careful selection of the correct surfactant. Applications of emulsifying agents and dispersing agents, as well as general surface-active effects, are also discussed.

Use of iodine adsorption as a measure of cellulose fiber crystallinity

L. E. Hessler and R. E. Power (Texas Technological College). *Textile Research J. 24:* 822-827 (September, 1954).

The iodine adsorption method has been found useful in detecting changes in cotton cellulose structure (crystallinity) brought about by heat and chemical action. For the first time, it has been possible to demonstrate cellulose crystallinity differences due to fiber development, as measured by fiber fineness and maturity. Cotton fiber in lengths from 3/4 to 1-9/32 in. did not show crystallinity variations when maturity was of the same magnitude. Comparison of the results obtained by this method with those of other chemical methods for determining crystallinity show good agreement, considering differences which may have resulted from the source of cellulose material. 19 references.

PHYSICS G 2

Friction of a fiber round a cylinder and its dependence upon cylinder radius

H. G. Howell (Brit. Rayon Res. Assoc.). *J. Textile Inst. 45:* T575-T579 (August, 1954).

This paper describes measurements of the friction of a fiber (nylon) against a cylinder of dissimilar material (a) Perspex, (b) glass, and discusses the effect of a change in cylinder radius. Results were reproducible only when the cylinder surface had been specially cleaned. 4 references.

Measurement of triboelectric response of raw cottons

C. E. Kirkwood, Jr., O. H. Bellamy, N. S. Kendrick and H. M. Brown (Clemson School of Textiles). *Textile Research J. 24:* 853-860 (September, 1954).

By use of a novel commutator method, triboelectric potentials produced by rubbing cotton with various materials have been measured by comparison with known D.C. potentials. Results are given here for fiberboard (phenolic resin laminate, fabric base), cork roller material, synthetic rubber roller material, Lucite, polystyrene, glass and cellulose acetate sheet, used as rubbing materials on three varieties of cotton and trash extracted from baled cotton. The purpose of this study was to learn if the sufficiently great differences in triboelectricity produced by cottons and trash could be used practically in the electrostatic cleaning of cotton. 17 references.

Physics in the dyeing, printing, and finishing industries

N. W. Yelland. *J. Soc. Dyers Colourists 70:* 333-346 (August, 1954).

The applications of physics in textile processing are reviewed, with particular reference to calico printing. Among topics discussed are color, luster, drape and handle, thermal and electrical properties, measurement of moisture content, repeating patterns, optical measurements, engraving, and microscopy. 18 references.

BIOLOGY G 3

Micro-organisms which decompose cellulose

H. Ostertag. *Z. Hyg. Infekt.-Kr. 133:* 489-509 (1952). Through *Brit. Cotton Ind. Research Assoc. 34:* 655 (August 31, 1954).

The decomposition of cellulose by fungi and bacteria is discussed. From the literature and from his own investigations the author gives an account of efforts to classify the cellulose-decomposing bacteria and to prepare pure cultures of anaerobic, aerophilic, and aerobic strains. He then gives a detailed illustrated account of the various types.

MISCELLANY H

British Cotton Industry Research Association

F. C. Toy. *Chemistry and Industry No. 36:* 1096-1099 (September 4, 1954).

Cotton textiles—an opportunity in Texas

University of Texas. Cotton Economic Research. In cooperation with the Cotton Research Committee of Texas. Austin, Texas, 1954. 145p.

Part 1 discusses the basis of cotton textile development in Texas and part 2 the principal locational determinants, such as markets, labor, water, cotton, climate, waste disposal, taxes, power, competitive advantage of modern equipment, and research and technical services. Numerous tables and graphs.

Experiences on a United Nations assignment in Israel

S. Kershaw. *J. Textile Inst. 45:* P328-P336 (July, 1954).

Experiences and observations on a textile technical assistance mission.

Plant development notes: 1954 series. Part 5

Brit. Rayon and Silk J. 31: 57-62 (July, 1954).

Swiss textile machinery at the Basle Fair.

Technical significance of government specifications

S. J. Kennedy. *Papers Am. Assoc. Textile Technol. 9:* 169-175 (September, 1954).

Vertical and horizontal organization

W. Crossley. *J. Textile Inst. 45:* P504-P530 (August, 1954).

The paper deals with vertical and horizontal organization in the dyeing and finishing sections of the British textile industry. The present position, in Britain and overseas, is discussed. Statistics relating both to prices and to employment are given. The systems are compared under the following headings: (1) flexibility, (2) variety, (3) quality, (4) costs, (5) service, and (6) trade relations.

PATENT CHECKLIST

U. S. Patents may be obtained from the U. S. Patent Office, Washington 25, D. C., for 25 cents per copy. Photostatic copies of foreign patents are available. Charges for these photostats are based on the number of pages in the patent.

FIBERS A

NATURAL FIBERS A 1

Apparatus for the dry mechanical extraction of fibers from stems of textile plants

A. Angiolini and R. Barbuti (Italy). USP 2 690 596, October 5, 1954.

Degumming of fibrous plant material

O. Benedek. BP 706 699, January 19, 1951. Through *J. Appl. Chem. 4:* 274 (August, 1954).

Production of fibers from bast fiber plants

Chemimpex GmbH (Switzerland). BP 706 031, January 5, 1951. Through *J. Appl. Chem. 4:* 274 (August, 1954).

Retting of ramie

O. Benedek. BP 706 702, February 13, 1951. Through *J. Appl. Chem. 4:* 274 (August, 1954).

Ramie fiber separation

J. Rinse. USP 2 687 351, August 24, 1954.

MAN-MADE FIBERS A 2

Crimping and stabilizing of acrylonitrile polymer fibers

L. C. Holt (to the Chemstrand Corp.). USP 2 686 339, August 17, 1954.

Dyeable resin-modified acrylonitrile polymers and method for producing same

W. R. McClellan (to E. I. du Pont de Nemours and Co.). USP 2 686 136, August 10, 1954.

YARNS B

DRAWING AND ROVING B 3

Drafting mechanism

V. A. Burnham and A. C. Adams (to Saco-Lowell Shops). USP 2 689 383, September 21, 1954.

Saddle for top rolls

R. K. Whitehead. USP 2 689 984, September 28, 1954.

Stop mechanisms for drawing frames and the like

J. P. Mackie (to James Mackie & Sons Ltd.). BP 706 907, April 7, 1954.

Thread and lint collector for textile drafting machines

F. Kalwaites (to Whitin Machine Works). USP 2 688 778, September 14, 1954.

Vertical apron drafter

J. R. Andrews, Jr. and R. Jacques (to Bachmann Uxbridge Worsted Corp.). USP 2 689 382, September 21, 1954.

SPINNING, WINDING, TWISTING B 4

Automatic balloon control

R. J. Clarkson (to United States Rubber Co.). USP 2 689 449, September 21, 1954.

Bobbin

G. Manning (to West Point Mfg. Co.). USP 2 689 692, September 21, 1954.

Bobbin holder arrangement for spinning machines and the like

J. J. Keyser (to Schiess AG, Germany). USP 2 689 693, September 21, 1954.

Polythene bobbins

H. N. Ewer (to G. and E. Equipment and Contracts Ltd.). BP 706 442, March 31, 1954.

Pressure rollers for textile speed frames and spinning machines

F. Calzone (Italy). BP 706 754, April 7, 1954.

Sectional spinning machine

J. J. Keyser (to Schiess AG, Germany). USP 2 690 641, October 5, 1954.

Spool or bobbin

E. G. Crooks (to Lestershire Spool and Mfg. Co.). USP 2 690 885, October 5, 1954.

Telescopic supporting device for thread guides

L. Vella (Italy). USP 2 690 643, October 5, 1954.

Thread suction means for spinning machines

Lufttechnische GmbH (Germany). BP 706 507, March 31, 1954.

Mechanism for building packages of yarn on uptwisting and like machines

E. Findlow (to Ernest Scragg & Sons Ltd.). BP 706 417, March 31, 1954.

Twisting head

F. Hadwich (Germany). USP 2 688 837, September 14, 1954.

Motor drive unit for textile winding machines and the like

A. E. Winslow and J. A. Bradshaw (to J. P. Stevens & Co., Inc.). USP 2 689 448, September 21, 1954.

Winding spool

C. K. Dunlap (to Sonoco Products Co.). USP 2 690 311, September 28, 1954.

GENERAL B 5

Driving mechanism for textile machines

P. E. Sherill, Jr. and G. H. Browne (to Cocker Machine and Foundry Co.). USP 2 690 243, September 28, 1954.

Method for making continuous twistless bonded yarn

B. Lawrence (to Fiberbond Laboratories Inc.). USP 2 689 813, September 21, 1954.

Thread guide

G. A. Hunter (to E. I. du Pont de Nemours and Co.). USP 2 689 694, September 21, 1954.

Thread guide

H. J. McDermott (to American Viscose Corp.). USP 2 690 313, September 28, 1954.

Yarn cone holder with locking means

W. E. Turner (to O. B. Andrews Co.). USP 2 690 290, September 28, 1954.

FABRICS C

WARPING, SLASHING, YARN PREPARATION C 1

Machines for unwinding yarn from cheeses or hanks and rewinding into bobbins

Michele Ratti S.p.A. (Italy). BP 706 580, March 31, 1954.

Machines for winding cross-wind spools

Maschinenbau & Giesserei AG (Germany). BP 706 833, April 7, 1954.

Method of regulating a thread separating device for separating threads from a warp

S. S. C. Fleischer (Denmark). USP 2 690 606, October 5, 1954.

Warp beam

T. E. Watson. USP 2 690 312, September 28, 1954.

WEAVING C 2

Arrangement for guiding push rods for the control of heddles in weaving looms and in particular multiple-shuttle weaving looms

Y. Latieule (to Societé Comptoir Linier, France). USP 2 690 194, September 28, 1954.

Automatic weft replenishing mechanism for looms

H. G. Smith and G. W. Shackleton (to George Hattersley & Sons Ltd.). BP 706 401, March 31, 1954.

Control mechanisms for Jacquards

A. Shortland (to Mellor Bromley & Co. Ltd.). BP 706 908, April 7, 1954.

Device for and method of reading picks from pattern cards in looms

T. Rutti (to Gebr. Staubli and Co., Switzerland). USP 2 690 770, October 5, 1954.

Device for the separation of the wefts in multibox looms

K. Schwabe (Switzerland). USP 2 690 195, September 28, 1954.

Eliminating set marks in weaving textile fabrics

W. W. Dennison, C. C. Abramson and W. E. Davis (to Celanese Corp.). USP 2 689 587, September 21, 1954.

Gripper shuttle looms

Sulzer Frères Soc. Anon. (Switzerland). BP 706 610, March 31, 1954.

Heddle

P. C. Consoletti (to Draper Corp.). USP 2 690 771, October 5, 1954.

Loom for weaving tufted pile fabrics

I. B. Bassindale and F. B. Schofield (to Platt Brothers and Co. Ltd.). USP 2 690 772, October 5, 1954.

Manufacture of textile fabrics for belting

S. Fry, S. A. Murray and R. J. Thornton (to British Belting and Asbestos Ltd.). BP 706 403, March 31, 1954.

Repair head for heddles

W. H. Thorpe (to Walker Manufacturing Co.). USP 2 691 389, October 12, 1954.

Shuttles for looms for weaving

Maschinenfabrik Ruti AG (Switzerland). BP 706 408, March 31, 1954.

Tapes woven especially for carrying hooks and/or eyes and the like

T. F. Aymá. BP 706 551, March 31, 1954.

Thread cleaner with knot control

A. Moos (Switzerland). USP 2 690 607, October 5, 1954.

KNITTING C 3

Carrier rod driving mechanism for knitting machines

C. R. Fegley (to Textile Machine Works). USP 2 688 861, September 14, 1954.

Circular knitting machine

C. Rizzo (to Textile Corp.). USP 2 688 862, September 14, 1954.

Combined tension unit and stop motion device for use in a yarn handling apparatus with a large number of sources of yarn

L. M. Duryee (to Princeton Knitting Mills, Inc.). USP 2 689 393, September 21, 1954.

Knitting machine

M. C. Miller. USP 2 690 660, October 5, 1954.

Warp-knitted fabric

G. N. Cooper. USP 2 691 286, October 12, 1954.

Warp knitting machine

F. Lambach (to Robert Reiner, Inc.). USP 2 688 860, September 14, 1954.

Yarn guide for flat knitting machine

P. J. Schoenster (to Alfred Hofmann and Co.). USP 2 690 066, September 28, 1954.

Yarn supplying and changing mechanism for circular knitting machines

A. M. Brown and G. D. Stibbe (to G. Stibbe and Co. Ltd.). USP 2 691 285, October 12, 1954.

GENERAL C 4

Apparatus for binding pile fabrics

J. McCreery. USP 2 690 722, October 5, 1954.

Bonded resilient fibrous material suitable for upholstery

P. Merriman (to Xetal Products Ltd.). BP 706 413, March 31, 1954.

Noncorrugating fabric

S. J. Jamison and F. Yates (to Chicopee Mfg. Corp.). USP 2 691 391, October 12, 1954.

Nonwoven fabrics of bonded glass fibers

M. R. Pesce. USP 2 689 199, September 14, 1954.

Pile fabric floor covering

F. P. Groat (to Magee Carpet Co.). USP 2 691 390, October 12, 1954.

Apparatus for winding flexible material into roll form

C. L. Barker and A. L. Hancock (to Walker Crosweller and Co. Ltd.). USP 2 690 883, October 5, 1954.

Thread cutting mechanisms

R. Vines (to Thomas Walker & Son Ltd.). BP 706 584, March 31, 1954.

Yarn handling equipment: combined tension unit and stop-motion device

L. M. Duryee (to Princeton Knitting Mills, Inc.). USP 2 688 789, September 14, 1954.

FINISHES D

WET PROCESSES D 1

Methods and apparatus for the treatment of threads and yarns

W. B. Lowe (to American Viscose Corp.). USP 2 690 405, September 28, 1954.

Anti-static treatment for synthetic fiber materials

Johnson and Johnson (Gt. Britain) Ltd. BP 709 555. Summary in *Dyer 112:* 365 (September 3, 1954).

Apparatus for the continuous mercerization of cotton

W. F. Luther. USP 2 688 863, September 14, 1954.

Crinkling of fibers

N. Miyazawa and M. Tsuda (Oriental Rayon Co.). Japan. Pat. 5373, October 19, 1953. Through *Chem. Abstracts 48:* 11806 (October 10, 1954).

Natural, synthetic, cellulose acetate, and regenerated cellulose fibers are treated with a mild swelling agent, then for friction without tension, and finally with heat and resin.

Treating textile fibers, yarns and fabrics with an aqueous suspension of very finely divided silicon dioxide or titanium oxide

Deutsche Gold-und Silber Scheideanstalt. BP 708 269. Summary in *Dyer 112:* 365 (September 3, 1954).

Textile conditioning composition

C. Schlatter (to American Viscose Corp.). USP 2 690 427, September 28, 1954.

Treatment of textile materials to reduce their tendency to felt and to increase their abrasion resistance

M. Lipson and D. L. C. Jackson (to Commonwealth Scientific and Industrial Research Organization, Australia). USP 2 689 193, September 14, 1954.

Process of treating yarn cake

C. R. Dolmetsch (to Celanese Corp. of America). USP 2 689 192, September 14, 1954.

Process of treating rayon cakes

A. S. Brown and T. W. Terwilliger (to Skenandoa Rayon Corp.). USP 2 690 375, September 28, 1954.

Process for treating synthetic acrylic textiles

J. D. Martone (to E. I. du Pont de Nemours and Co.). USP 2 689 195, September 14, 1954.

Process for resin treating wool textile material

J. N. Dalton and W. B. Kaupin (to Pacific Mills). USP 2 689 806, September 21, 1954.

Aminoplastic condensation products for a crease-resistant finish on cotton and viscose fabrics

Casella Farbwerke Mainkur (Germany). BP 703 083, January 27, 1954.

Process for increasing the crease resistance of textiles and urea-complex-formaldehyde treatment baths for use therein

K. Quehl (Germany). BP 703 432, February 3, 1954.

Finishing cellulosic textile fabrics with formaldehyde

W. W. Russell and H. C. Allen (to Sayles Finishing Plants, Inc.). USP 2 689 194, September 14, 1954.

Flameproofing aqueous suspensions of halomethylated phosphates

J. G. Frick, Jr. and J. W. Weaver (to United States of America). USP 2 686 769, August 17, 1954.

Organic phosphorus compounds for increasing the flame resistance of textiles and method of applying the same

D. E. Kvalnes and N. O. Brace (to E. I. du Pont de Nemours and Co.). USP 2 691 566, October 12, 1954.

Polymeric organic phosphorus compounds for increasing flame resistance of textiles and method of using same

D. E. Kvalnes and N. O. Brace (to E. I. du Pont de Nemours and Co.). USP 2 691 567, October 12, 1954.

Solution for flameproofing cellulosic materials

J. P. Wadington (to National Lead Co.). USP 2 691 594, October 12, 1954.

Textile shrinking apparatus

H. A. Secrist (to the Kendall Co.). USP 2 688 864, September 14, 1954.

Method of producing textiles having improved heat resistance

Sandoz Ltd. BP 708 282. Summary in *Dyer 112:* 366 (September 3, 1954).

Method of making wrinkle resistant fabric and composition therefor

M. J. Spangler and R. L. Wayland, Jr. (to Dan River Mills, Inc.). USP 2 690 404, September 28, 1954.

DYEING AND PRINTING

Acetate dyeing process including acid fading inhibitor

F. Berardinelli and W. J. Myles (to Celanese Corp.). USP 2 691 565, October 12, 1954.

Addition of anthraflavic acid to vat dyestuffs in package dyeing of cellulosic textiles

H. B. Bradley and H. Wakefield (to Imperial Chemical Industries Ltd.). BP 709 734. Summary in *Dyer 112:* 442 (September 17, 1954).

After-treatment of acid-dyed cellulose acetate with salicylic acid

B. J. Weir (to E. I. du Pont de Nemours and Co.). USP 2 690 954, October 5, 1954.

Design dyeing apparatus

S. B. Schwartz and J. Muller (to May Hosiery Mills). USP 2 690 118, September 28, 1954.

Dyeing textiles by impregnation with finely divided vat dyestuff dispersions

Badische Anilin- & Soda-Fabrik. BP 709 150. Summary in *Dyer 112:* 366 (September 3, 1954).

Fugitive tinting of nylon fibers

J. E. Livak and L. Hagan (to Deering Milliken Research Trust). USP 2 690 953, October 5, 1954.

Machines for printing or coating fabrics

A. J. Correia de Oliveira Barros (Belgium). BP 703 887, February 10, 1954.

The invention seeks to adapt screen printing to roller printing.

Pigment printing compositions of aqueous emulsions of pigments and organic solvent solutions of thermo-hardening synthetic resin

F. V. Davis (to Bleachers' Assoc. Ltd.). BP 709 735. Summary in *Dyer 112:* 366 (September 3, 1954).

Process of printing textiles from intaglio engraved rollers

H. Weisz and D. Costner (to Rock Hill Printing and Finishing Co.). USP 2 691 602, October 12, 1954.

Stabilization of vat dye leucos at high temperature with cobalt compounds

F. Fordemwalt (to American Cyanamid Co.). USP 2 690 952, October 5, 1954.

Textile-decorating pigment compositions

A. Booth (to Interchemical Corp.). USP 2 691 005, October 5, 1954.

Textile printing apparatus with rotatable printing table

P. Langseth (Sweden). BP 702 831, January 27, 1954.

DRY PROCESSES D 3

Alternate air drying and superheated steam drying of fabrics in tenters

H. Krantz and W. Krantz (Germany). BP 709 972. Summary in *Dyer 112:* 442 (September 17, 1954).

Apparatus for treating products such as cloth by means of air, steam or other gaseous fluid

J. Dungler (France). BP 703 391, February 3, 1954.

Blower installations and machines for drying strips and webs of fabric, paper or the like

J. Dungler (France). BP 703 556, February 3, 1954.

Control of humidity in drying machines

R. R. Clegg (to Tomlinsons (Rochdale) Ltd.). BP 709 911. Summary in *Dyer 112:* 441 (September 17, 1954).

Machines for drying fabrics and the like in the form of webs, strips or bands

J. Dungler (France). BP 703 283, February 3, 1954.

Machines with blowing nozzles, for the treatment of strip materials

J. Dungler (France). BP 702 813, January 20, 1954.

Means for conveying web-like material

Svenska Flaktfabricken Akt. (Sweden). BP 703 550, February 3, 1954.

Setting apparatus for textile fabrics

H. Richter (to Paramount Textile Machinery Co.). USP 2 689 071, September 14, 1954.

Setting nylon fabrics

G. V. Mecklenburgh, S. Shaw and H. W. Peters (to British Nylon Spinners, Ltd.). BP 708 814 and BP 708 815. Summary in *Dyer 112:* 525-526 (October 1, 1954).

Sieve drum drying machine

Fleissner and Sohn, Maschinenfabrik (Germany). BP 703 135, January 27, 1954.

Stenter type drying machines

H. Kay (to Mather and Platt, Manchester). BP 709 248. Summary in *Dyer 112:* 365 (September 3, 1954).

Superheated steam drying process and device

J. Dungler (France). BP 703 392, February 3, 1954.

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